USSR

UDC: 530.145

AZIMOV, V. A. and ARUSHANOV, G. G.

"Solving the Unitarity Condition for the Amplitude of the Two-Particle Process"

Tomsk, Izvestiya VUZ--Fizika, No 7, 1973, pp 108-114

Abstract: A solution is given for the unitarity condition of the amplitude for the two-particle inelastic process $1 + 2 \rightarrow 3 + 4$ by specifying the sum of the contributions of all possible inelastic reaction channels differing from this process and the amplitudes of the elastic scattering of

$$1 + 2 \rightarrow 1 + 2$$
$$3 + 4 \rightarrow 3 + 4,$$

if the unitarity condition for the collision operator is $SS^{+} = 1$. A system of two algebraic equations is obtained. Their exact solution, expressing the coefficient of partial decay of the inelastic two-particle reaction given by the first process above, is determined. A formula obtained for the angular distribution in such reactions is compared with the experimental data with good results.
1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ANALYTICAL PROPERTIES OF PHOTON PROPAGATOR AS FUNCTION OF CHARGE AND ENERGY -U-
AUTHOR--AZIMOV, YA.I.

COUNTRY OF INFO--USSR

SOURCE--YADERN. FIZ.; 11: 206-9(1970)

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROMAGNETIC WAVE PROPAGATION, PHOTON, CHARGE DENSITY, ASYMPTOTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0107 STEP NO--UR/0367/70/011/000/0206/0209

CIRC ACCESSION NO--AP0105193
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105193

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESTRICTIONS ON ANALYTICAL PROPERTIES OF THE PROPAGATOR AS FUNCTION OF CHARGE AND ENERGY ARE STUDIED THAT ARE IMPOSED DUE TO THE RENORMALIZATION GROUP AND TO THE KALLEN-LEHMANN REPRESENTATION. IT IS SHOWN THAT BRANCH POINTS IN THE CHARGE COMPLEX PLANE ARE TO EXIST IN POSITIONS DEPENDING ON THE ENERGY, AS WELL AS BRANCH POINTS IN THE ENERGY PLAND IN POSITIONS DEPENDING ON THE CHARGE. IF THE BRANCH POINTS ARE THE THRESHOLDS OF PRODUCTION "RESONANCE" STATES THEN ZERO IN THE CHARGE PLANE IS THE CONDENSATION POINT FOR THE BRANCH POINTS, SO THAT THE PERTURBATIONAL SERIES ARE ASYMPTOTIC EXPANSIONS. FACILITY: IOFFE INST. OF PHYSICS AND TECH., LENINGRAD.

UNCLASSIFIED

USSR

UDC 547.26'118

YULDASHEV, A. Yu., ABIDOV, S. AND AZIMOV, Z.

"On the Synthesis of Several Dialkyl Phosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1034-1035

Abstract: Higher dialkyl phosphates (C_4-C_8) were obtained by oxidation of dialkylphosphites with nitrogen dioxide or chlorine dioxide. These phosphates were tested for use as liquid ionites for reducing ash content, and for improving the reactivity of cotton cellulose.

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1/2 031 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MOLECULE WEIGHT DISTRIBUTION OF SOME POLYOLEFINS -U-

AUTHOR-(02)-BUNIYATZADE, A.A., AZIMOVA, A.B.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (6), 37-40 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FRACTIONATION, POLYETHYLENE, ETHYLENE GLYCOL, MOLECULAR WEIGHT, INTERNAL STRESS, BUTENE, COPOLYMER, CRACK PROPAGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0994 STEP NO--UR/0191/70/000/006/0037/0040

CIRC ACCESSION NO--AP0134706

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134706

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FRACTIONATION OF THE INTERMEDIATE D. POLYETHYLENES (I) IN A TETRALIN (SOLVENT)-TRIETHYLENE GLYCOL (PRECIPITANT) SYSTEM GAVE THE POLYDISPERSITY OF I. THE RESISTANCE TO CRACKING DURING HEATING OF I IS HIGH WHEN THE MOL. WT. DISTRIBUTION RANGE IS NARROW. I ARE SMALLER OR EQUAL TO 90PERCENT CRYST. AND THE CRYSTALLITES COMPETE FOR THE AMORPHOUS, LOW MOL. WT. FRACTIONS CAUSING INTERNAL STRESSES, WHICH INCREASE THE PROBABILITY OF CRACKING. IN THE CASE OF ETHYLENE-ALPHA-BUTYLENE COPOLYMER (II) THE POLYDISPERSITY HAS LITTLE EFFECT ON THE RESISTANCE TO CRACKING; THE DOMINANT FACTOR IS THE AV. MOL. WT. OF II.

UNCLASSIFIED

Foundry

USSR [illegible]

OSHCHEPKOV, [illegible], SKAZIN, Yu. V., [illegible], V. [illegible], and [illegible]
Zlatoustovskiy Metallurgical Plant

"Effect of the Quantity of Liquid Synthetic Slag on the Quality of Steel and Alloys"

Moscow, Stal', No 10, Oct 73, pp 909-911

Abstract: A method has been developed for determining the optimal height of the layer of liquid synthetic slag necessary during casting of alloys [illegible], Kh20N80, EI602, [illegible] and steels [illegible], [illegible] and others into [illegible] ingots in order to ensure [illegible] quality of surface and [illegible] of the ingot. The depth of [illegible] into the ingot [illegible] at extreme heights of the layer of liquid synthetic slag. The reduction in slag consumption from 17-[illegible] to 8-10 [illegible] of alloy considerably improves the quality of the [illegible]structure and surface. The optimal height of the layer is directly proportional to the rate of casting.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

USSR UDC 537.531

AZIZBEKYAN, L. A., and TERMINASOV, Yu. S.

"Study of Dynamic and High-Velocity Deformation of Polycrystalline Iron by the Method of X-Ray Small-Angle Scattering"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR; Fizika, Vol 7, No 2, 1972, pp 139-145

Abstract: The authors made a comparative study of the state of the crystal structure of metals subjected to deformation under various types of stress (impact, high-velocity action in comparison with the static type of load), as well as the principal characteristics of the substructure of the material studied. Polycrystalline iron foil 150 microns thick, containing 0.03-0.04 percent carbon, was used for the study. Specimens were annealed in a vacuum furnace at 950°C for half an hour, then subjected to static, impact, and high-velocity tension at room temperature. The method of X-ray small-angle scattering was used to evaluate the mean angle of misorientation of the blocks of the mosaic. The influence of the thermal effect on the development of the elements of the fine crystal structure is considered, as well as the relationship between variations in substructure characteristics and the mechanism for the realization of plastic deformation.
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AYZIN, F.L.

ANTENNAS

JPRS 54764

22 December 1971

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. D. Bakhrakh, corresponding member of the USSR Academy of Sciences and V. I. Samoylenko, candidate of engineering sciences: [illegible] i Sverkhvysokochastotnyye Radiotekhnicheskiye Sistemy, Trudy [illegible] Ordzhonikidze, Vol 2, No 215, 1970, signed to press 14 October 1970, Machine Building Press, Moscow.

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A Microwave Switch Based on Thin Ferromagnetic Film	[illegible]
A Study of Antennas With Frequency Beam Scanning	[illegible]
Concerning the Distortions of Spiral Antenna Radiation Characteristics	[illegible]
Calculation and Design of Diode Switching Devices in the Decimeter Range	[illegible]
A Study of Some Characteristics of Diode Switching Devices in the Decimeter Range	[illegible]
Thinned Antenna Arrays With Small Side Lobes	[illegible]

[I - USSR - F]

AYZIN, F.L.

UDC 629.7.051:621.396.029.031

CONCERNING THE DISTORTIONS OF SPIRAL ANTENNA RADIATION CHARACTERISTICS

Engineer F. L. Ayzan

pages 254-265

The majority of works devoted to the investigation of cylindrical spiral antennas describe an idealized model: an infinitely thin ideally conducting spiral, along which a traveling wave of current is excited, with a constant propagation, corresponding to a case of an infinite spiral [references 1-4].

However, as experiments demonstrate, the radiation characteristics of such spirals may differ noticeably from the radiation characteristics of such a model because of the presence of a number of distorting factors. The most essential of these are:

a) reflection of the wave from the ends of the spiral;

b) attenuation of the wave of current along the spiral, caused by losses to radiation;

c) the presence of a cophase component in the excitation of double spirals;

d) the effect of the transitional section of the spiral.

In this work we consider the effect of the first three factors on the radiation characteristics of single and double cylindrical spirals.

Initial Relationships

In order to consider the effect of the distorting factors, we will give certain relations for an idealized model, which is a single spiral, of right-hand winding, with a non-attenuating current wave, consisting of N turns with a diameter 2a and a vertical angle α (figure 1). We will consider the propagation constant of this wave to be equal to the propagation constant of the fundamental wave β_1 in an infinite spiral. Then the current in the spiral may be written in the form

$$I_{(\varphi)} = I_0 e^{-i\beta_1 \varphi},$$

and the first approximations for the components of the vector potential of the radiation field of the spiral will be equal to:

$$\left.\begin{aligned} A_\theta(\theta, \varphi) &= C(\theta) I_0 (ka \sin\theta); \\ A_\varphi(\theta, \varphi) &= C(\theta) I_0 (ka \sin\theta), \end{aligned}\right\} \quad (1)$$

CONCLUSIONS

The analysis of the effect of such factors as reflection from the ends and [illegible]nuation in the spiral, and the presence of a cophase component of the exc[illegible]ation in double cylindrical spiral antennas, on the radiation characteristics demonstrates that their presence leads to a noticeable distortion of the DN and the polarization of the field being radiated.

1. The presence of reflection from the end of the spiral leads to the following effect:

(a) the power radiation pattern becomes asymmetrical, and in this case the variation in its amplitude as a function of the azimuth increases as the reflection factor increases;

(b) the polarization of the field in a general case is elliptical. Even with weak reflection (such as 4%, with respect to power, for example) the ellipticity factor in the direction of the axis is noticeably different from one ($r = 1.75$). With an increase in reflection, the ellipticity factor deteriorates and with total reflection ($\Gamma = 1$) the polarization becomes linear. The angle of inclination of the polarization plane in this case, for $\beta < 60^\circ$, varies approximately as does φ;

(c) on the plane φ = constant, the ellipticity factor varies proportional to $1/\cos\beta$;

(d) the orientation of the polarization ellipse varies as a function of φ. For $\beta < 60^\circ$ the angle of inclination of the major axis of the ellipse is approximately equal to φ.

2. The attenuation in the spiral leads to a widening of DN and has little effect on the polarization characteristics of the field being radiated.

3. With cophase excitation of a double spiral, there is no radiation in the direction of the axis and the DN is multi-lobed in nature, and in this case as the length of the spiral increases the number of lobes also increases. The polarization depends to a marked degree upon the azimuth and varies as φ varies from right circular to left circular polarization.

BIBLIOGRAPHY

1. Kornhauser, E. T., Jour. Appl. Phys., 1951, vol. 22, No. 1, p. 887.

2. Kraus, J. D., Proc. IRE, 1949, vol. 37, No. 1, p. 263.

AZIN, V. A.

(4)

JPRS 59674
1 Aug 73

UDC 550.83.002.56

HELIUM SELF-OSCILLATING MAGNETOMETER WITH OPTICAL PUMPING OF He^4 ATOMS

[Article by R. A. Zhitnikov, P. P. Kuleshov, N. A. Dovator, and V. A. Azin (Physico-technical Institute imeni A. F. Ioffe); Leningrad, Geofizicheskiya Apparatura, Russian, No 50, 1972, pp 5-9]

For measuring the various parameters of a geomagnetic field, ever-increasing use is being made of the quantum magnetometers with optical pumping of the vapors of alkali metals and of metastable He^4 atoms. These magnetometers can be built according to a system with automatic frequency tuning of the external (reference) oscillator toward the center of the working medium's resonance line or according to a self-oscillating system utilizing a spin-type oscillator (self-oscillating magnetometers). The self-oscillating magnetometers are simpler, more compact and reliable, and provide a higher operating speed.

The magnetometers using vapors of alkali metals as a working medium when compared with helium-type magnetometers reveal several shortcomings, including the nonlinear dependence between the magnetic field which is being measured and frequency of signal which is being recorded, requirement of thermostatic control over the absorption chamber, and asymmetricity of resonance line.

Whereas the atoms of alkali metals have been employed in the development of self-oscillating magnetometers and magnetometers with automatic frequency tuning, the metastable He^4 atoms were used only in magnetometers functioning according to the last setup. The development of a self-oscillating magnetometer with optical pumping of metastable He^4 atoms [1, 2] permitted us to create a device merging the possibility of a spin-type oscillator and the advantages of He^4 as a working agent.

One of the basic difficulties in developing such a magnetometer was occasioned by the complexity of the optical detection of the metastable He^4 atoms' Larmor frequency (0.7-2.1 MHz) in the range of terrestrial magnetic fields. For the effective detection of light modulation with wave length $\lambda = 1.083$ microns at such frequencies, we developed two types of special

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

USSR UDC: 8.74

AZIZOV, G. Kh.

"An Algorithm for Computerized Tracing of a Branched Water Supply Network With Determination of the Shortest Distances Between Sources and Consumers"

Vopr. vychisl. i prikl. mat.--sbornik (Problems of Computational and Applied Mathematics--collection of works), vyp. 11, Tashkent, 1972, pp 50-53 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V658 by V. Mikheyev)

Translation: The author gives a flowchart of a program for the following problem. A map of a locality is given with indication of the coordinates (X, Y, Z) of construction points and sources of water. It is required to find the layout of a network with minimum extent and distance between consumption points and sources. It is noted that the solution of this problem can be used as initial data for determining the optimum flow distribution in branched networks with several sources of water.

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1/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DETERMINATION OF THE CORRELATION OF EXCHANGE INDEX WITH COLUMN DIAMETER -U-

AUTHOR-(02)-AZIZOV, KH.F., ISKHAKOVA, N.I.

A

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 18-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EXCHANGE REACTION, SODIUM CHLORIDE, CATION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1714 STEP NO--UR/0291/70/014/001/0018/0019

CIRC ACCESSION NO--AP0125335

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0125335
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONVERSION DEGREE (I) WAS DETD. EXPTL. DURING EXCHANGE REACTIONS RH PLUS NACL FORMS AND IS FORMED FROM RNA PLUS HCL ON A STRONGLY ACID CATION EXCHANGER. I DOES NOT DEPEND EITHER ON THE COLUMN HEIGHT OR ON ITS DIAM. THE UTILIZATION DEGREE OF THE EXCHANGER DECREASES WITH DECREASE IN COLUMN HEIGHT AND WITH INCREASE IN ITS DIAM. FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--COMPLEXES OF COBALT, II, AND COBALT, III, WITH ISONICOTINIC ACID HYDRAZIDE AND SOME OF ITS DERIVATIVES -U-

AUTHOR-(03)-KHAKIMOV, KH.KH., SHABILALOV, A.A., AZIZOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1022-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, HETEROCYCLIC NITROGEN COMPOUND, ORGANIC COMPLEX COMPOUND, CHEMICAL SYNTHESIS, ORGANOCOBALT COMPOUND, HETEROCYCLIC OXYGEN COMPOUND, AZIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/2032 STEP NO--UR/0078/70/015/004/1022/1026

CIRC ACCESSION NO--AP0132280

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132289

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORG. SOLVENT SOLNS., COCL SUB2 .6H SUB2 O FORMS ADDUCTS WITH ISONICOTINIC ACID HYDRAZIDE (I), II, III, OR IV AND IN BASIC SOLNS. IT FORMS COMPLEXES. THE SYNTHESIS OF (SHOWN ON MICROFICHE) IS GIVEN AND THEIR SOLY. IN WATER, MPS., AND ELEC. COND. ARE GIVEN. THE INVESTIGATED LIGANDS EASILY REPLACE ALL NO SUB2 GROUPS IN NA SUB3 (CO(NO SUB2) SUB6). H SUB2 O IN THESE COMPLEXES IS IN THE OUTER SPHERE. COMPN. OF THE PRODUCTS IS INDEPENDENT OF REACTANT RATIO WHEN NA SUB3 (CO(NO SUB2) SUB6) IS USED AS A REACTANT. FACILITY: TASHKENT. FARM. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 632.95

ODINETS, A. A., TONYSHEVA, V. S., and AZIZOV, N. A.

"Carbophos as a Larvicide in Controlling Sinanthropic [sic] Flies"

Tr. VNII dezinfektsii i sterliz. (Works of the All-Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 89-94 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N424)

Translation: Using carbophos considerably reduces the fly population as a result of the effective action of the chemical on the preimaginal stages of development of the insects. In order to destroy larvae in farm livestock manure, it is recommended that 0.3-0.5% water emulsions of a carbophos (10-12 liters per cu. m) be used with an interval of 10 days between applications for conditions in the Central Asian republics. T. A. Belyayeva

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Polymers and Polymerization

USSR

UDC 541.64:547.458.81

MIRKAMILOV, I. M., AZIZOV, U., SADYKOV, M. U., and USMANOV, KH. U., Scientific Research Institute of Chemistry and Cotton Cellulose Technology

"Radiation Induced Graft Copolymerization of Methyl Methacrylate From the Vapor Phase Onto Cellulose"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 14, No 8, Aug 72, pp 1704-1708

Abstract: The characteristics of grafting copolymerization of methyl methacrylate from vapor phase have been investigated, the main thrust being in the direction of the development of grafting conditions which would preclude the formation of homopolymers. The grafting was studied under conditions of γ-irradiation of the system cellulose-monomer as well as when the preirradiated cellulose was treated with methyl methacrylate vapor. Co^{60} was the source of radiation. It was established that grafting carried out with concurrent irradiation was accompanied by intensive homopolymerization of the monomer. Grafting onto preirradiated cellulose in presence of water vapor proceeds at a higher rate without the formation of a homopolymer. The yield of the grafted copolymer of polymethylmetacrylate depends on the structure of cellulose preparation, decreasing in the order: cotton > flax > ramie.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EPR STUDY OF FREE RADICALS IN GAMMA IRRADIATED COTTON CELLULOSE -U-

AUTHOR-(03)-KHAMIDOV, D.S., AZIZOV, U.A., MILINCHUK, V.K.

COUNTRY OF INFO--USSR

SOURCE--UZB. KHIM. ZH. 1970, 14(1), 39-42

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EPR, FREE RADICAL, GAMMA RAY, FIBER PLANT, CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0407 STEP NO--UR/0291/70/014/001/0039/0042

CIRC ACCESSION NO--AP0122587
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122587

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA OF CELLULOSE IRRADIATED WITH GAMMA RAYS AT 77-3000EGREESK ARE DISCUSSED AND INTERPRETED. THE EVIDENCE IS PRESENTED IN SUPPORT OF THE EXISTENCE OF CH SUB2 OH, CHO, AND I FREE RADICALS.

UNCLASSIFIED

Acc. Nr: AP0100577 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0065

102370z Preparation of mineral oils from a paraffin production filtrate by a hydrorefining method. Azizova, M. Kh.; Chernozhukov, N. I.; Grishin, A. P. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(2), 23-5 (Russ). A paraffin production filtrate, b. 270–454°, and contg. at −20°, 43.83% solid hydrocarbons, was hydrogenated at a vol. input rate of 0.8 hr^{-1} with 500 m^3 H/m^3 on an Al-Co-Mo catalyst at 290° 50 atm, light fractions were distd. from the hydrogenate, and the conc. obtained in 91% yield was dewaxed. Oils prepd. in 49.14% yield by dewaxing with 400% of a 30:70 Me_2CO–PhMe mixt. added in equal portions at 0, −15, −25, and −60° and washed with 200% of the solvent differed from the resp. oils prepd. in 63.60% yield by urea dewaxing mostly with respect to f.p. (−46 and −21°). The corresponding paraffins differed mostly with respect to aromatic hydrocarbon content (3.4 and 2.4%), oil content (14.55 and 1.91%), and urea-complexing hydrocarbon content (64.80 and 83% yields on the solid hydrocarbon present). The dewaxed oils were distd. and corresponding 25° fractions were combined and subjected to adsorption purification on 10% of an aluminosilicate catalyst of 0.25-0.5 mm particle size in order to prep. industrial oils I-12, IT-19, and I-32 and transformer oils satisfying GOST 982-56 with respect to stability and tan angle of dielec. loss (0.14 and 0.15 at 70°). Lucile S. Davison

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19842012

USSR

UDC 547.26'118

AZIZOVA, SH. A., MEL'NIKOV, N. N., VLADIMIROVA, I. L., and NEGREBETSKIY, V. V.

"Synthesis of Mixed Esters of Phosphoric and Phosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 816-820

Abstract: The title reaction was carried out by reacting β-halogenated benzoylpropionic acids with trialkyl phosphites, thereby synthesizing compounds not previously reported in the literature. The reaction can proceed via two pathways: one resulting in the phosphoric acid derivatives; the other in phosphonic acid derivatives. With trimethyl phosphite a mixture of the two types of derivatives result; but with triethyl phosphite, only derivatives of phosphoric acid were detected. Physical properties, elemental composition, and NMR data are given for the studied compounds.

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USSR

UDC 547.26'118

AZIZOVA, Sh. A., and MEL'NIKOV, N. N.

"From the Field of Organic Insectofungicides. Phosphorylated Oximes"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 88-90

Abstract: A method was developed by the authors for the synthesis of O-phosphorylated oximes with the general structure $C_2H_5OP(S)(NR_1R_2)ON{=}C(R_3R_4)$, where R_1 through R_4 are alkyls up to C_3H_7, by the reaction of ketoximes with amidochlorothiophosphates in the presence of pyridine. The compounds possess weak insecticidal properties.

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USSR

UDC 612,826

SARKISYAN, S. M., and AZIZYAN, A. A., Armenian Scientific Research Station of Sericulture, Ministry of Agriculture, Armenian SSR

"Transmission of the Learning Effect to the Progeny"

Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol 51, No 5, Dec 70, pp 309-312

Abstract: It is considered probable that RNA, DNA and proteins participate in the retention of a memory record, which persists under the effect of surroundings. The possibility of memory transfer to the next generation was studied in mulberry silkworms. Various species differ in the form of their curled-up cocoons. Most of the cocoon have two axis, a long one and a short one. The long axis can be used to characterize the degree of extension of the cocoon. Caterpillars of the mulberry silkworm were grown in cells in which they had to curl up. It was found that, as a result of this, the caterpillars were considerably deformed. The descendants of the silkworm from these deformed caterpillars were found to be more deformed than the control species. In a second series of tests parthenogenic caterpillars were used. In this case the deformed and the normal (control) species were identical in their genotype when they were mated with the same male. With all

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USSR

SARKISYAN, S. M., and AZIZYAN, A. A., Dokaldy Akademii Nauk Armyanskoy SSR, Vol 51, No 5, Dec 70, pp 309-312

three varieties studied, the degree of extension of the cocoons had been enhanced in the descendants from deformed species. The conclusion is drawn (from this and earlier work) that there is transmission of the learning effect from one generation to the next one. This transmission takes place even when only the mother has been taught.

2/2

USSR

MELIKADZE, L. D., MIKADZE, L. D., SHONIYA, D. I., GURGENIDZE, Z. I., BARABADZE, Sh. Sh., and AZKHAZAVA, I. l., Georgian Institute of Plant Protection

"Olfactometry to Evaluate Chemical Attractants"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 2, 1972, pp 473-476

Abstract: A description is given of a device used to test attractants of the European spruce bark beetle (Dendroctonus micans) and other insects. Unlike other olfactometric methods, it can determine the optimum concentration of an attractant in the air. Air is fed through a thermostat-controlled heating coil and bubbler containing the substance tested. The temperature is controlled to keep the vapor pressure uniform. The air saturated to the same concentration by the vapor of the attractant (working mixture) enters the working part of the olfactometric unit. Both the control and the working parts of the unit are divided into three chambers. The working mixture after entering the olfactometer gradually fills the three chambers and through openings in the bottom of the third chamber diffuses along a platform where the insects are kept. An equal amount of pure air flows from the control part and moves along the platform in the opposite direction, creating a concentration

USSR

MELIKADZE, L. D., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 2, 1972, pp 473-476

gradient along the platform. Depending on the reaction of the insects to the substance, they crawl into the working or control part of the olfactometer. The optimum concentration is determined (a) from a curve showing the dilution of the working mixture at the outlet from the third chamber of the olfactometer and (b) from the dynamics of migration of the insects in time. The optimum concentration is that which attracts the most insects.

USSR UDC: 519.2

SIRAZHDINOV, S. Kh., AZLAROV, T. A.

"Limit Theorems for Some Characteristics of the System M|G|1|n"

Izv. AN UzSSR. Ser. fiz. mat. n. (News of the Academy of Sciences of the Uzbek SSR. Physics and Mathematical Sciences Series), 1972, No 6, pp 24-30 (from RZh-Kibernetika, No 5, May 73, abstract No 5V79)

Translation: Limit theorems are proved for the busy period and number of demands served during the busy period in the system $M|G|1|n$ as $n \to \infty$ and $\rho \to \infty$. Here ρ is the load of the system $M|G|1$.

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USSR

UDC 519.2

AZLAROV, T. A., DZHAMIRZAYEV, A. A.

"Relative Stability for Sums of a Random Number of Random Variables"

Izv. AN UzSSR. Ser. Fiz.-mat. n. (News of the Uzbek SSR Academy of Sciences, Physical and Mathematical Sciences Series), 1972, No 2, pp 7-14 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V14)

Translation: Let ξ_{nk}, $k = 1, 2, \ldots$, for each $n \geq 1$ be a sequence of independent identically distributed random variables and ν_n, $n = 1, 2, \ldots$ be a sequence of random variables assuming integral nonnegative values.

The basic result of this paper is the following:

Theorem 1. If the following conditions are satisfied: A) $P\{\nu_n/k_n < x\} \to A(x)$ for $n \to \infty$ at the continuity points of $A(x)$ where $A(x)$ is a distribution function such that $A(+0) = 0$, k_n, $n \geq 1$ is a sequence of nonnegative numbers such that $k_n \to \infty$ for $n \to \infty$ and B) $\xi_{n1} + \ldots + \xi_{nk_n} \xrightarrow{P} 1$ for $n \to \infty$, then

$$P\{\xi_{n1} + \ldots + \xi_{nk_n} < x\} \to A(x) \text{ for } n \to \infty$$

at the continutity points of the distribution function $A(x)$.

A study was made of the application of theorem 1 to the investigation of

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AZLAROV, T. A., et al., Izv. AN UzSSSR. Ser. Fiz.-mat. n., 1972, No 2, pp 7-14

the asymptotic behavior of the lifetime of a duplicated system with fast recovery and behavior of the stationary length of the queue and waiting time for the system M|G|1 under high loading conditions.

Let us note that the more general result in theorem 1 is presented in the paper by the reviewer [D. Sil'vestrov] (RZh-Matematika, 1972, 1V76).

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USSR UDC 519.217

SIRAZHDINOV, S. Kh., AZLAROV, T. A., SULTANOVA, D. Kh.

"Asymptotic Study of Certain Queueing Systems"

Bol'shiye Sistemy Massovoye Obsluzh. Nadezhnost' [Large Systems. Queueing. Reliability -- Collection of Works], Moscow, Nauka Press, 1970, pp 351-358 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V41 by O. Viskov).

Translation: A homogeneous Poisson flow of requests is serviced by n independently functioning identical devices. The duration of servicing is assumed to be exponentially distributed. The devices are subject to random failures. The mean time between failures of each device and the repair time are considered to be independently exponentially distributed random quantities with mean θ_1^{-1} and θ_2^{-1} respectively. After each servicing event, the device is given a preventative maintenance inspection, requiring a random time with exponential distribution and mean θ_3^{-1}. Upon completion of inspection, the device is sent to repair with probability p or returned to service with probability 1-p. It is assumed that the requests which find no free operating devices upon entering the system are refused and are considered lost. Requests, the servicing of which is interrupted due to a defective device, are also considered lost. Let P_{ijk} be the probability that i devices are involved in servicing, while j and k devices are in repair and

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UDC 519.217

SIRAZHDINOV, S. Kh., AZLAROV, T. A., SULTANOVA, D. Kh., Bol'shiye Sistemy Massovoye Obsluzh. Nadezhnost' Moscow, Nauka Press, 1970, pp 351-358

inspection respectively. The asymptotic behavior of these probabilities is studied as 1) $\theta_2 \to \infty$, $\theta_3 \to \infty$, and 2) $\theta_1 \to 0$, $p \to 0$, $\theta_3 \to \infty$.

2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ACCOUNTING FOR THE INTERMEDIATE ENERGY REGION IN DISPERSION SUM RULES -U-

AUTHOR-(02)-AZNAURYAN, I.G., SOLOVYEV, L.D.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(4), 870-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SCATTERING AMPLITUDE, REGGE POLE, PION PROTON INTERACTION, PION SCATTERING, DISPERSION EQUATION, HIGH ENERGY PARTICLE, PHASE SHIFT ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1080 STEP NO--UR/0367/70/011/004/0870/0879

CIRC ACCESSION NO--AP0136500

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0136500
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DEVELOPED TO ACCOUNT FOR THE INTERMEDIATE ENERGY REGION IN THE DISPERSION SUM RULES. THE METHOD MAKES IT POSSIBLE TO FIND THE PARAMETERS FOR THE HIGH ENERGY PROCESSES WITH USE OF THE LOW ENERGY PHASE SHIFT ANAL. THE METHOD IS APPLIED TO OBTAIN THE REGGE POLE RESIDUES FOR THE AMPLITUDES B PRIME(PLUS OR MINUS) (NU, T) OF THE PION-N SCATTERING. THIS ENABLES ONE TO PREDICT, IN PARTICULAR, THE MAGNITUDE OF ROTATION OF THE N SPIN IN THE HIGH ENERGY PI PRIMEPLUS OR MINUS RHO SCATTERING IN FRAMEWORK OF THE REGGE-POLE MODEL. FACILITY: INST. FIZ. VYS. ENERG., SERPUKHOV, USSR.

UNCLASSIFIED

USSR

UDC 576.851.55.095.2

AZOVA, L. G., GUSEV, M. V., KHOR'KOVA, G. A., and KORSHUNOV, I. S., Moscow State University

"Molecular Oxygen Uptake by Cell Suspensions of Clostridium butyricum"

Moscow, Mikrobiologiya, No 5, 1971, pp 799-802

Abstract: The rate of oxygen uptake by Clostridium butyricum strains MO-1, BC-6K, and USA in phosphate buffer was found to vary both with the initial concentration of dissolved oxygen and with the density of the cell suspensions. It was particularly high in the MO-1 and USA strains in the lag phase. At high initial oxygen concentrations (7.0 to 10.0 mg/liter) the MO-1 and USA strains took up 2.5 to 3.0 times more oxygen that did the BC-6K strain. An increase in the cell concentration reduced the rate in all cases. Preliminary incubation of the cell suspensions with oxygen greatly reduced the rate of uptake by the MO-1 and USA strains but had no effect on that of the BC-6K strain.

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE RESPONSE OF SOME CLOSTRIDIUM BACTERIA TO MOLECULAR OXYGEN -U-

AUTHOR-(03)-AZOVA, L.G., GUSEV, M.V., IVOYOV, V.S.

A

CCUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 55-59

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CLOSTRIDIUM, CULTURE MEDIUM, OXYGEN CONSUMPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1410 STEP NO--UR/0220/70/039/001/0055/0059

CIRC ACCESSION NO--AP0109472

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0109472
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESPONSE TO MOLECULAR OXYGEN WAS STUDIED AMONG SEVERAL BUTYRIC BACTERIA BELONGING TO THE CLOSTRIDIUM GENUS. OXYGEN THRESHOLD CONCENTRATIONS WERE DETERMINED AND CONSUMPTION OF OXYGEN, DISSOLVED IN THE CULTURAL BROTH, WAS STUDIED DURING THE LAG PHASE. THE SO CALLED OBLIGATE ANAEROBIC PROPERTY OF THE BACTERIA WAS FOUND TO VARY QUANTITATIVELY AND QUALITATIVELY IN DIFFERENT STRAINS. THE QUANTITATIVE DIFFERENCE CONSISTED IN VARIOUS THRESHOLD VALUES OF OXYGEN CONTENT IN THE MEDIUM, WHILE THE QUALITATIVE ONE, IN VARIOUS ABILITY AND NECESSITY TO CONSUME OXYGEN BEFORE GROWTH.

UNCLASSIFIED

A

USSR

UDC 576.851.55.095.2

AZOVA, L. G., GUZEV, M. V., and IVOYLOV, V. S., Chair of Microbiology, Soil Biology Faculty, Moscow State University imeni M. V. Lomonosov

"The Response of Some Clostridia to Molecular Oxygen"

Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 55-59

Abstract: The response to molecular and Cl. butyricum oxygen of some strains of Clostridium Saccharobutricum which are usually treated as strict anaerobes, was studied. The dynamics of oxygen intake by the bacterial cells and the possibility of bacterial development under constant (and even forced) oxygen enrichment of the culture medium were investigated. Various strains of Clostridium saccharobutricum and Clostridium butyricum were used in the experiments. Oxygen threshold concentrations were determined and consumption of oxygen, dissolved in the culture fluid was studied during the lag phase. Tables are presented showing the oxygen threshold concentrations for development of Clostridium strains and the oxygen intake and lag phase length in relation to initial oxygen content

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

AZOVA, L. G., et al., Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 55-59

in the medium. The so-called obligate anaerobic property of this bacterial group was found to vary quantitatively and qualitatively in different strains. It is concluded that none of the strains investigated is actually an obligate anaerobe.

USSR UDC 517.946

AZOVSKIY, V. V.

"On the Solution of the T_α^3 Problem for One Control of the Mixed Type"

V sb. Materialy Itog. nauchn. konferentsii. Kuybyshev. gos. ped. in-t, 1970, Vyssh. matematika (Papers. Summation of Scientific Conference. Kuybyshev State Pedagogical Institute, 1970, Higher Mathematics -- Collection of Works), Kuybyshev, 1970, pp 8-12 (from RZh-Matematika, No 4, Apr 71, Abstract No 4B404)

Translation: Suppose m is a natural number, $q = m/2(m + 2)$, the functions $\phi(y)$, $\psi(x)$, $f_{1-4}(x) \in C^1$ $(0, \infty)$ are given ($f_1(\infty) = a \neq 0$, $f_1'(\infty) = f_{2,3,4}(\infty) = 0$), $D = \{(x, y) | x > 0, x + y > 0\}$, $\Gamma = \{(x, y) | x > 0, x \quad y = 0\}$. With the aid of the extremum principle uniqueness is proved, and with the method of integral equations there is proved the existence of a classical solution of the problem

$$u_{xx} + \operatorname{sgn} y \cdot u_{yy} + \frac{2q}{x} u_x + \frac{2q}{|y|} u_y = 0, \text{ in } D;$$

$$u|_\Gamma = \psi(x), \lim_{x \to +0} x^{2q} u_x = \varphi(y) \text{ for } 0 < y < \infty;$$

$$u(x, -0) = f_1(x) u(x, +0) + f_2(x) \text{ for } 0 < x < \infty;$$

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AZOVSKIY, V. V., Materialy Itog. nauchn. konferentsii. Kuybyshev. gos. ped. in-t, 1970. Vyssh. matematika, Kuybyshev, 1970, pp 8-12

$$\lim_{y\to-0}(-y)^{2q}u_y=f_2(x)\lim_{y\to+0}y^{2q}u_y+f_1(x) \text{ for } 0<x<\infty;$$

$$u(0,0)=0;\ \lim_{x,\,y\to\infty}u=0.$$

N. Flaysher.

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USSR

KHIZHNYAK, N. A., AZOVSKIY, Yu. S., GUZHOVSKIY, I. T.

"Interaction of Plasmoids with an Axially Symmetric Magnetic Field"

Kiev, Physics of Plasma and Problems of Controlled Thermonuclear Synthesis (collection); No 2, 1971, pp 5-52

Abstract: The work is in two parts. In the first part the authors theoretically and experimentally studied the interaction of plasmoids with an inhomogeneous axial field; and in the second part, their behavior in a homogeneous field.

In the first part a theory developed in an approximation of a model of a compressed helix closely describes qualitatively such experimental relationships as the variation of the radius, induced current, temperature, and velocity of the center of inertia of a plasmoid. At the same time, significant differences in the character of the interaction beforehand with the fields of magnetized and nonmagnetized plasmoids were found. The theory also qualitatively explains the experimentally observed capability of the plasmoids to penetrate a field exceeding the critical field.

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USSR

KHIZHNYAK, N. A. et al, Physics of Plasma and Problems of Controlled Thermonuclear Synthesis (collection), No 2, 1971, pp 5-52

In the second part longitudinal and transverse broadening of a plasmoid in a homogeneous field was studied. The experimental results obtained agree well qualitatively with theory (in the hydrodynamic approximation). Under the given conditions of the experiment it appeared that the basic process is the longitudinal thermal broadening and adiabatic cooling of the plasmoid; the rate of such broadening is at least 2 orders of magnitude greater than the rate of transverse broadening.

The article includes 34 figures. There are 54 bibliographic references.

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USSR

AZOVSKIY, Yu. S., GUZHOVSKIY, I. T., KHIZHNYAK, N. A.

"Electric Polarization of a Plasma Flow in an Axisymmetric Magnetic Field"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1893-1900

Abstract: The authors continue their investigation of the interaction between plasma flows and axisymmetric magnetic fields. In their previous work ("Plasma Physics and Problems of Controlled Thermonuclear Synthesis", a collection of works, No 4, "Nauk. dumka", Kiev, 1970, p 5) the authors showed that many phenomena which are experimentally observed when an extended plasma flow interacts with a magnetic field (change in azimuthal induced current, radial compression, deceleration, and heating) are satisfactorily described in the qualitative approximation by a generalized "small compressed plasmoid" model. In this paper, an experimental and theoretical investigation is made of the behavior of electric polarization fields in a plasma flow interacting with an axisymmetric magnetic field. A comparison is drawn between experimental and theoretical curves for radial and axial fields of polarization in both homogeneous and nonhomogeneous magnetic fields. Eight figures, bibliography of eleven titles.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--GAMMOPHEN ACTION ON THE BIOELECTRIC ACTIVITY OF THE BRAIN -U-

AUTHOR-(03)-NIKIFOROV, M.I., AZUBALIS, V., GENERALOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 146-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, NERVOUS SYSTEM DRUG, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0194 STEP NO--UR/0390/70/033/002/0146/0149

CIRC ACCESSION NO--AP0119190

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119190

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GAMMOPHEN (4,AMINO,N,(ALPHA,METHYLPHENETHYL) BUTYRAMIDE, HLC) ADMINISTERED I.V. TO RABBITS AT 1-10 MG-KG DEFINITELY ALTERED THE PERIOD OF SOME BETA AND GAMMA FLUCTUATIONS AND HIGH AMPLITUDE ALPHA ACTIVITY; AT 15-75 MG-KG IT PREDOMINATELY ACTIVATED THE BETA ANG GAMMA RHYTHMS. IN RABBITS WITH ARMIN INTOXICATION, GAMMOPHEN RESTORED THE SPINDLE SHAPED ACTIVITY AND STEADILY INCREASED THE AMPLITUDE OF BETA AND GAMMA WAVES. NEUROANATOMICAL ISOLATION OF HEMISPHERES IN THE BRAIN STEM DECREASED THE LOW AND MEDIUM FREQUENCIES (1-13 FLUCTUATION-SEC) AND THE SPINDLE SHAPED RHYTHMS AGAINST THE GAMMOPHEN BACKGROUND. SUBARACHNOIDAL ADMINISTRATION OF GAMMOPHEN AT 15 AND 100 MU G CAUSED HIGH AMPLITUDE SYNCHRONIZED POTENTIALS IN THE ELECTROCORITCORGRAM. FACILITY: VOENNO MED. AKAD. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 548.736.6

PUSHCHAROVSKIY, D. Yu, ~~BIATARIN, T.,~~ POBEDIMSKAYA, Ye. A., and BELOV, N. V., Moscow State University imeni M. V. Lomonosov

"The Crystal Structure of the Zn-Analog Milarite"

Moscow, Kristallografiya, Vol 16, No 4, Jul-Aug 71, pp 721-724

Abstract: The authors determine the structure of synthetic Zn-milarite $K(Mn,Fe)_2(Zn,Mn)_3Si_{12}O_{30}$, which serves as another example of the close crystallochemical similarity between Zn and Be. They examine the possibility of the equilibrium $Mn^{2+} + Fe^{3+} \rightleftarrows Mn^{3+} + Fe^{2+}$ and on this basis solve the question as to the Fe distribution. Figure 1 shows the axonometric projection of Zn-milarite crystals; Figure 2 is a line diagram of powder patterns of Zn- and Be-milarites. The authors' findings are graphically illustrated in four tables: Table 1 gives the results of a chemical analysis of Zn-milarite made at the Institute of Geology and Geophysics of the Siberian Branch of the USSR Academy of Sciences; Table 2 compares the powder patterns of Zn- and Be-milarites; Table 3 lists the coordinates of the elementary atoms in the structure of Zn-milarite; and Table 4 gives the interatomic spacings in the structure of Zn-milarite. The article contains 2 figures, 4 tables, and a bibliography of 6 titles.

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Graphite

USSR UDC 546.831+546.26

GERT, L. M., and BABAD-ZAKHRYAPIN, A. A.

"Interaction of Zirconium Vapors with Graphite"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 2, 1971, pp 381-382

Abstract: The authors selected zirconium as a condensing metal to determine the possibility of appearance of complex phases during condensation of vapors of a transition metal on a heated graphite substrate. The phase composition of the layers was determined by x-ray analysis. The influence of layer growth rate on oxygen and nitrogen content was studied. The data presented indicate that the second phase, present in the surface layers, is a complex phase containing carbon, as well as nitrogen or nitrogen and oxygen simultaneously. It is apparently best represented by the formula $ZrC_{1-x}(O,N)_x$.

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USSR

UDC 621.785.532.062.57:669.28

KUZNETSOV, G. D., BABAD-ZAKHRYAPIN, A. A., and LAGUTKIN, M. I. (Moscow Institute for Automobiles-Roads)

"Carburizing Molybdenum in a Glow Discharge Plasma"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1970, pp 10-12

Abstract: An investigation was made of the molybdenum carburizing process in a glow discharge plasma, taking into account the possible formation of a pyrocarbon layer on the surface. Methane was used as the plasma producing gas. A schematic diagram of the discharge setup is presented and the experimental procedure is briefly described. At 1300-1600°C the carbide layer thickness in the presence of glow discharge and in its absence was approximately the same. An increase in the discharge temperature led to a sharp decline in the carbide layer thickness, while above 1700° its formation was stopped. The absence of the discharge effect on the carburizing kinetics at 1300-1600°C is explained by the formation of a pyrocarbon layer on the surface. The time dependence of the Mo_2C layer under conditions of glow discharge and without was practically the same being close to the parabolic. An analysis of the results shows that heating of the molybdenum in a methane glow discharge plasma makes it possible to saturate the metal by carbon, to fully eliminate the metal-media interaction, and to decarburize the

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

USSR

KUZNETSOV, G. D., et al., Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1970, pp 10-12

carbon-saturated surface layer. Further, the carburizing process can be strongly intensified with a certain combination of discharge parameters. 6 figures, 5 references.

BABADZHANOVA, Kh.

tals are outlined. It is shown that a decrease of at least one unit of the suggested photon level of the multi-quantum excitation process in photoconductivity of activated alkali halide crystals is associated with the thermal ionization of excited states of impurity centers. Graphical and photographic data of experimental results are included.

Bedilov, M. R., K. Khaydarov, and Kh. Babadzhanova.
Nature of radiation defects formed on the surfaces of solids by ruby laser radiation. IAN UzbSSR, Ser. fiz-mat. nauk, no. 2, 1972, 66-68.

Results are described of an experimental investigation of damage processes on the surface of solids from ruby laser radiation in a free-running regime. Radiation energy was 1-3 joules and maximum power density was ~10^7 watt/cm^2; the beam was focused using a f = 50 mm lens. Targets were W, Mo, Ni, Zn, and Si, purified by laser radiation and placed in a 10^{-6} torr vacuum. Radiation processes were studied using microscopic and oscillographic methods, which provided data on integral and time characteristics of target surface defects during the laser pulse period. Integral defects formed by 800 μsec exposure were studied by microscope. In the 0.6-2 joules energy range, growth of surface radiation defects was strongly dependent on the nature of target and laser energy. At 0.6-1.0 joules, the target structure was predominantly band-like; but melting zones and craters did not appear. Individual 150-200 μ microcraters were formed however on the surface due to the intensive laser pulse peaks. With an increase of energy to 2 joules, the structure band disappeared and macrocrater and melting zones were observed on the target. The macrocraters were almost identical, nearly circular and their size was a function of target type, varying between 800 and 1050 μ. For W, Mo, Ni, and Zn targets, macrocraters attained 800, 1050, 950, and 1200μ respectively, at a laser energy of 2 joules. Low current variations were recorded by an

PUBLICATIONS

USSR .

BABADZHANOV, M. M., and LIDSKIY, Ya. V. Osnovy Meditsinskoy Sluzhby Grazhdanskoy Oborony (Fundamentals of the Civil Defense Medical Service), Tashkent, "Meditsina," 1970, 140 pp

Translation: Annotation: The book contains explanations of problems of organizing formations of the civil defense medical service, discusses the work of personnel in sanitary teams (or detachments from these teams) in giving first aid in various centers of mass casualties and the volume of this care, the tactics of a first aid detachment in various centers of mass casualties and the work of its functional subdivisions in giving initial medical care to victims, the work of specialized treatment institutions based in hospitals in offering specialized medical care to victims, and sanitary-hygiene and antiepidemic measures in centers of mass casualties.

The work is intended for a broad range of ordinary medical workers.

Foreword: Considering the aggressive intentions of the imperialist forces and their preparations for a nuclear missile war, the Communist Party and the Soviet Government are taking all necessary steps to strengthen the military might of our state.

Civil defense taken on great significance in raising the defensive capability of our homeland under modern conditions. It was created to protect

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BABADZHANOV, M. M. and LIDSKIY, Ya. V.,"Meditsina" 1970, 140 pp

the population and national economy of the country against weapons of mass destruction.

In the Official Report of the CPSU Central Committee to the 23rd CPSU Congress, Comrade L. I. Brezhnev said, "It is necessary to improve civil defense and military-patriotic work among the working people, especially young people, to strengthen the sponsorship relationships of enterprise, educational institutions, kolkhoz and sovkhoz workers' collectives with military units and subunits, and to show greater concern for the soldiers and officers of the Soviet Army and their families. The entire party and all Soviet society are obliged to constantly work on this matter" (Materialy XXIII S"yezda KPSS [Materials of the 23rd CPSU Congress], Political Publishing House, 1966, p 78).

In this book, the authors have thrown light on the questions of organizing formations of the civil defense medical service and training their personnel, organizing first aid and the activity of sanitary team (or detachment) personnel in various centers of mass casualties, organizing first medical care and the actions of first aid detachments in centers of mass casualties, organizing specialized care for victims in specialized hospitals of the civil defense medical service, and setting up sanitary-hygiene and antiepidemic steps in centers of mass casualties.

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USSR

BABADZHANOV, M. M. and LIDSKIY, Ya. V., "Meditsina" 1970, 140 pp

In their presentation of the material, the authors have attempted to give special attention to the part of middle-level medical workers and to show the volume and nature of their work at all stages of medical evacuation.

In writing the book, they used widely-known, published materials.

The authors will be grateful for valuable advice and critical remarks on the substance of the material presented.

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USSR

BABADZHANOV, M. M. and LIDSKIY, Ya. V., "Meditsina" 1970, 140 pp

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

USSR UDC: 8.74

SAGOYAN, A. N., BABADZHANYAN, K. G.

"On Optimum Procedures for Troubleshooting"

Izv. AN ArmSSR, ser. tekhn. n., 1972, 25, No 3, pp 53-56 (from RZh-Kibernetika, No 5, May 73, abstract No 5V856 by O. Belkin)

Translation: The paper attempts to systematize somewhat the results found previously on optimizing troubleshooting routines in complex systems. The systematization is done in accordance with the number of criteria of optimality, the number of trouble spots in the object being checked, the number of input data required for diagnosis, the positive results of diagnosis, and the relations between separate checks.

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USSR UDC 621.791.011.001.5:669.721 + 669.5

ANTONOV, YE. G., Engineer, POPOV, A. S., Engineer, YAKUSHIN, B. F., Candidate of Technical Sciences, OSOKINA, T. N., Engineer, NIKOLAYEVA, V. S., Technician, MIKHEYEV, I. M., Engineer, SMIRNOVA, YE. I., Engineer, SHPAGIN, B. V., Engineer, and BABADZHANOVA, I. S., Engineer

"Effect of Rare-earth Elements on the Weldability of Magnesium-Zinc and Magnesium-Zinc-Zirconium Alloys"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 6-8

Abstract: The effect of some rare-earth metals on the weldability of magnesium-zinc and magnesium-zinc-zirconium alloys was studied in experimental melts. Sheets of the alloys, 2 mm thick, were obtained by rolling on a "Duo" laboratory mill from flat ingots cast in metal molds. Before rolling, the ingots were heated to 380-400° C (11 intermediate heats, 2-3 passes). Shrinkage was 15-25 percent. After rolling, the sheets were annealed at 260° C for an hour. The filler wire was made of the same material. The results indicate that rare-earth metals (neodymium,

USSR

ANTONOV, YE. G., et al., Svarochnoye Proizvodstvo, No 12, Dec 70, pp 6-8

lanthanum, mischmetal) at the rate of up to 0.6 percent by weight affect the hot-shortness of the studied alloys in different ways during welding. The most probable reason for this is the varying effect of rare-earth metals on the plasticity of the studied alloys in the region of the lower limit of the brittle temperature range, as well as the varying effect on the magnitude of the latter. The weld cracking resistance of the alloys can be increased by alloy additions of lanthanum and cerium mischmetal and the use of filler wire (2 percent Zn, 0.45 percent Zr, 3.44 percent cerium mischmetal, the rest Mg).
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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--A POSSIBILITY OF CHECKING ARP'S HYPOTHESIS -U-

AUTHOR--BABADZHANYANTS, M.K.

B

COUNTRY OF INFO--USSR

SOURCE--ASTROFIZIKA, VOL. 6, FEB. 1970, P. 170-173

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--GALAXY, COSMIC RADIO SOURCE, QUASAR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1604 STEP NO--UR/0388/70/006/000/0170/0173

CIRC ACCESSION NO--AP0125226

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125226

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A TEST OF ARP'S HYPOTHESIS REGARDING THE EJECTION OF RADIO SOURCES FROM PECULIAR GALAXIES. THE PROPOSED TEST IS BASED ON THE FACT THAT AMONG ARP'S IDENTIFICATIONS ARE A NUMBERJ OF QUASARS. MORE PARTICULARLY, THE TEST INVOLVES AN EXAMINATION OF THE CORRECTION TO THE VISIBLE MAGNITUDE OF A GIVEN QUASAR. ON THE BASIS OF AN APPLICATION OF THIS TEST, IT IS CONCLUDED THAT ARP'S HYPOTHESIS IS ERRONEOUS. FACILITY: LENINGRADSKII GOSUDARSTVENNYY UNIVERSITET, LENINGRAD, USSR.

USSR UDC 621.318.435.3

BABAK, O. V., BOLOTOV, B. V.

Magnitnyye usiliteli s analogovoy pamyat'yu (Magnetic Amplifiers with Analog Memory), Kiev, Izdatel'stvo Tekhnika, 1972, 108 pp

Translation: A study was made of the problems of constructing magnetic amplifiers with an analog memory applied in automated control systems. The amplifiers with composite cores -- magnetically hard for recording analog data and magnetically soft for reading it -- are described. Such devices, on amplifying the analog signal, permit reliable storage of it for a very long time. Their schematics and structural designs are presented, and the design characteristics and methods of controlling and improving the storage precision of the standard circuits are discussed. Examples of their prospective application in industrial automation systems are given. The book is intended for engineers and technicians working in the planning, design and operation of automation and remote control systems. There is 1 table, 53 illustrations and a 28-entry bibliography.

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BABAK, O. V., et al., Magnitnyye usiliteli s analogovoy pamyat'yu, Kiev, Izatel'stvo Tekhnika, 1972, 108 pp

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USSR

UDC: 621.318.435.3

[redacted], BOLOTOV, B. V.

"Magnetic Amplifiers With Analog Memory"

Magnitnyye usiliteli s analogovoy pamyat'yu (cf. English above), Kiev, "Tekhnika", 1972, 108 pp, ill. 41 k. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A85 K)

Translation: The problems of constructing magnetic amplifiers with analog memory used in automatic control systems are considered. A description is given of amplifiers with composite cores -- magnetically hard cores for recording analog information, and magnetically soft cores for readout. Devices of this type, by amplifying the analog signal, enable reliable signal storage for a considerable length of time. Circuits and structural diagrams, design particulars, and methods of control and improving accuracy of memory storage in typical circuits are given, and examples are also presented for promising applications in systems of industrial automation. 53 illustrations, 1 table, bibliography of 28 titles.

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USSR UDC: 621.314.26

BABAK, O. V., BIGUN, Ya. F., BOLOTOV, B. V., SITNIKOV, L. S., UTYAKOV, L. L., KHOMOVENKO, M. G., Institute of Electrodynamics, Academy of Sciences of the UkrSSR

"A Pulse Frequency Divider"

USSR Author's Certificate No 251000, filed 20 May 68, published 30 Jan 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A183 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a storage core made of a ferromagnetic material with rectangular hysteresis loop. To insure the possibility of regulating the division coefficient, the storage core with its windings is placed between the poles of a core of magnetically hard material. The control winding of this second core is connected to a key coincidence gate through a pulse shaper circuit. A pulse with fixed amplitude and duration is fed to the input of the magnetic divider. Before arrival of the first pulse, the core of the divider is in a state of negative magnetization and the shaper transistor is in the cutoff state. The first and each subsequent pulse increase the level of magnetization of the core up to the saturation point. When this happens, the tran-

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sistor is switched to the active state and it shapes an output pulse. The circuit then returns to the initial state. The division coefficient of the frequency divider can be varied by changing the magnetization of the magnetically hard core, thus changing the hysteresis loop of the core with rectangular characteristics. One illustration. N. S.

USSR UDC: 532.72

BABAK, V. N., KHOLPANOV, L. P., MALYUSOV, V. A., ZHAVORONKOV, N. M.

"Steady-State Mass Exchange in a Liquid-Gas System Under Conditions of Laminar Opposed Motion of the Phases"

Teor. osnovy khim. tekhnol. (Theoretical Principles of Chemical Technology), 1971, 5, No 2, pp 179-186 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B832)

Translation: This paper deals with the problem of redistribution of matter between the gas and liquid phases in the case of laminar film run-off of a liquid along the walls of vertical plates under counterflow conditions. The equations of diffusion in the liquid and gas phases respectively are written in the form

$$v_{ж}\frac{\partial c_{ж}}{\partial x}=D_{ж}\frac{\partial^2 c_{ж}}{\partial y^2},\quad v_{г}\frac{\partial c_{г}}{\partial x}=D_{г}\frac{\partial^2 c_{г}}{\partial y^2}$$

The boundary conditions are set up in the following manner: $c_{ж}=kc_{г}$, $D_{ж}\partial c_{ж}/\partial y=D_{г}\partial c_{г}/\partial y$ on the phase interface, $\partial c_{г}/\partial y=0$ on the axis of the channel

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BABAK, V. N. et al., Teor. osnovy khim. tekhnol., 1971, 5, No 2, pp 179-186

formed by the vertical plates $\partial c_ж/\partial y=0$ on the surface of the plates. [Translator's note: the subscripts ж and г in these expressions stand for liquid and gas respectively]. The concentration of transferred matter in the gas phase at the time of gas input into the system is c_0, while the concentration of transferred matter in the liquid phase at the time of liquid input into the system is zero. For different values of the dimensionless parameters ε and β^2, assuming a flat velocity profile in the liquid and gas phases, viz. $v_г=\bar{v}_г$, $v_ж=\bar{v}_ж$, where $\bar{v}_г$, $\bar{v}_ж$ are the average velocities of the gas and liquid phases respectively, formulas are derived for the average concentrations of liquid and gas at the output. It is shown that when the inequalities $\varepsilon\beta^2\ll 1$, $\varepsilon\ll 1$ are simultaneously satisfied, resistance to mass transfer is concentrated only in the liquid phase, and when the inverse inequalities $\varepsilon\beta^2\gg 1$, $\varepsilon\gg 1$ are simultaneously satisfied, the problem can be solved only in the gas phase, assuming that the concentration is equal to zero on the phase interface. Authors' abstract.

2/2

USSR

UDC 547.546.183.621.193.4

DZHAFAROVA, N. A., BABAKHANOV, R. A., and FARZALIYEV, V. M., IKHP [Expansion Unknown], Academy of Sciences Azerbaydzhan SSR

"The Synthesis of Some Cycloalkylphenol Esters of Phosphorous Acid Which Serve as Oil Additives"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 4, 1972, pp 137-138

Abstract: Studies were conducted on the synthesis of various cycloalkylphenol esters of phosphorous acid, and on their efficacy as antioxidants and corrosion preventatives in lubricating oils. The cycloalkylphenols were obtained by cycloalkylation of phenol and cresols with cyclopentene in concentrated sulfuric acid. The esters were synthesized by reacting the cycloalkylphenols with PCl_3 in the presence of triethylamine. The resultant esters were viscous liquids with a characteristic odor and were light brown in color. For evaluation of their antioxidant and anticorrosive properties the esters were added to lubricating oil DS-11 to a concentration of 1%. The results showed that certain of the phosphorous acid esters were effective as additives, and that esters containing the cyclohexyl radical were more effective than those with the cyclopentyl radical.

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USSR UDC 616.33*002.44-085.846.-07:[616.839+616.45]-072.7

BABAKHANOVA, Zh. B., Department of Gastroenterology and Clinical Biochemical Laboratory, Central Institute of Health Resorts and Physiotherapy, Moscow

"Alteration of Some Indices of Neurohumoral Regulation in Patients with Peptic Ulcer During Treatment with Ultrahigh-Frequency Electric Field"

Moscow, Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, Vol 36, No 1, 1971, pp 23-27

Abstract: The method of treating gastic and duodenal ulcers by means of a series of brief exposures to an ultrahigh-frequency electric field was tested on 98 patients aged 20 to 60, suffering from this disease for 1 to 15 years. Laboratory tests performed prior to the treatment revealed a decreased concentration of noradrenaline in blood and urine and an increased concentration of 11-hydroxycorticosteroids in blood plasma and of potassium in erythrocytes. These findings indicated a disturbed balance between the sympathetic and parasympathetic divisions of the autonomic nervous system and between the glucocorticoids

USSR

BABAKHANOVA, Zh. B., Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, Vol 36, No 1, 1971, pp 23-27

and mineral-corticoids. After the treatment, blood chemistry was significantly improved in most patients, and X-ray pictures showed healing of ulcers. These patients no longer suffered from epigastric pain and had a markedly improved digestion. On the basis of these results, the method was recommended for use in the treatment of peptic ulcers.

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USSR

UDC 621.311.25:621.039(47)

BABAKHANYAN, A. B.

"Atomic Power and Its First Steps in Armenia"

Ayastani zhogovrdakan tntesutyun. Nar. x-vo Armenii (Ayastani zhogovrdakan tntesutyun. National Economy of Armenia), 1970, No 7, pp 32-40 (from RZh-Teploenergetika, No 2, Feb 71, Abstract No 2U23)

Translation: The importance of using atomic power in the Armenian SSR is noted. A report is presented on the construction of an atomic electric power plant in Armenia. It will generate more than 6 billion kilowatt-hours of electric power per year, that is, more than all the electric power plants in 1969. Introduction of two stages of the atomic electric power plants into operation is planned for 1975 and 1976.

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USSR

UDC: 620.193.01

VOL'FSON, A. I., MARKOVA, N. Ye., CHERNYSHEV, V. V., LEBEDEV, V. N., BABAKIN, V. V.

"Some Electrophysical Characteristics of Anodic Films on Beryllium"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 346-347

Abstract: The electrophysical properties of anodic oxide on beryllium were studied by measuring breakdown voltage and capacitance. Beryllium specimens in the form of discs had threaded holes in the lateral surface for screwing in V95 aluminum alloy conductive rods insulated by a mixture of wax and rosin. Before anodizing, the specimens were degreased and then oxidized in a 20% aqueous solution of CrO_3. Current density was 20 A/dm^2, and temperature was 20°C. The resultant films had a thick porous outer layer and a thin barrier on the metal side. Film capacitance was measured in the same solution. a Teflon ring was pressed against the porous surface layer and filled with mercury. High surface tension kept the mercury from filling the pores in the film. In the resultant capacitor, the air in the pores and the film oxide served as the dielectric. The capacitance was determined by the total thickness of the oxide film. The results of these

USSR

VOL'FSON, A. I. et al., Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 346-347

measurements show that film thickness remains essentially constant with time. Measurements of the critical breakdown voltage of the film confirmed the capacitance measurements. Thick films formed over a 3-4 hour period can withstand voltages up to 1000 V.

Steels

USSR UDC 669.14.018.841

[redacted], ZHADAN, T. A., LEVIN, F. L., POSYSAEVA, L. I., and FEL'DGANDLER, E. G. (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

"Low-Carbon Corrosion-Resistant Steels"

Moscow, Stal', No 9, Sep 72, pp 836-839

Abstract: A survey is presented of investigations on corrosion-resistant -- especially low-carbon -- chromium-nickel steels of the austenitic class. The effect of various components of chemical composition on the susceptibility of the steels to intercrystalline corrosion is considered. It is recommended that carbon content in the steel be reduced and that the solid solution be stabilized by special alloying to prevent the formation of excess phases (σ -phase) or carbides on the grain boundaries. The corrosion properties of new, recently developed steels of the austenitic and ferrite-austenitic class are discussed.

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Steels

USSR UDC 6 69.14.018.8

BABAKOV, A. A., POSYSAYEVA, L. I., PETROVSKAYA, V. A., and SIDORKINA, YU. S., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"New High-Alloy Corrosion-Resistant Steel Type OOOKh21N2nM4B"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

Abstract: Experimental data are presented on the properties of the new OOOKh21N21M4B steel, designed for the manufacture of equipment for the production of double superphosphate by extraction phosphoric acid containing fluoride compounds. The chemical composition and mechanical properties of the steel are presented, as well as certain data on the corrosion resistance of the steel and its physical properties. The chemical composition is (percent):

USSR

BABAKOV, A. A., et al., Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

C	Mn	Si	P	S	Cr	Ni	Mo	Nb
0.03	Not Over 0.6	Over 0.6	0.03	0.02	20-22	20-22	3,4-3.7	% CX15 up to 0.8

The steel has high resistance to intercrystalline and knife-line corrosion.

2/2

USSR UDC 669.15.018.8

LEVIN, F. L., KONDRAT'YEV, A. I., BABAKOV, A. A., GOLOVIN, A. I., and KLIMOV, S. V.

"Effect of Alloying Elements on Structure and Properties of Chromium-Manganese Steel"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 119-124 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I609 by authors)

Translation: During the start-up of the industrial production of N-containing stainless steel Kh17AG14 (EP213) it was found that the steel is susceptible to the formation of porosity caused by the evolution of N_2 during the crystallization of ingots. Peculiarities of the effect of Ti, C, Ni, and N on the Steel's structure and properties were studied and rational alloying limits assuring the complete elimination of ingot porosity were established. The quality of the metal was improved without any impairment of its physico-mechanical properties. One illustration. One table. Bibliography with two titles.

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USSR

UDC 669.15.018.8:669.782

ZHADAN, T. A., and BABAKOV, A. A.

"Effect of Silicon on Structure and Properties of Chromium-Nickel Steels of Kh20N20 and Kh15N20 Type"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 82-86 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I594 by authors)

Translation: Kh15N20 steel with the addition of up to 6% Si and Kh20N20 steel with up to 5% Si possess homogeneous austenitic structure and stable properties. The more homogeneous the steel structure, the less is their embrittlement susceptibility. The authors establish the temperature-time embrittlement range of high-silicon steels, as well as the nature and composition of embrittlement-inducing excess phase. One illustration. Two tables. Bibliography with three titles.

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Steels

USSR UDC 6 69.14.018.8

BABAKOV, A. A., POSYSAYEVA, L. I., PETROVSKAYA, V. A., and SIDORKINA, YU. S., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"New High-Alloy Corrosion-Resistant Steel Type OOOKh21N2nM4B"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

Abstract: Experimental data are presented on the properties of the new OOOKh21N21M4B steel, designed for the manufacture of equipment for the production of double superphosphate by extraction phosphoric acid containing fluoride compounds. The chemical composition and mechanical properties of the steel are presented, as well as certain data on the corrosion resistance of the steel and its physical properties. The chemical composition is (percent):

USSR

BABAKOV, A. A., et al., Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

C	Mn	Si	P	S	Cr	Ni	Mo	Nb
0.03	Not Over 0.6	Over 0.6	0.03	0.02	20-22	20-22	3,4-3.7	% CX15 up to 0.8

The steel has high resistance to intercrystalline and knife-line corrosion.

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USSR

UDC 669.1.017.15'24'26-194

ZHADAN, T. A., and BABAKOV, A. A.

"Influence of Silicon on the Structure and Properties of Kh20N20 and Kh15N20 Chrome-Nickel Steels"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 82-86

Translation: A homogeneous austenitic structure and stable properties are characteristic of Kh15N20 steel with up to 6% Si and Kh20N20 steel with up to 5% Si. The more homogeneous the structure of the steels, the less tendency they show to embrittlement. The temperature-time intervals of embrittlement of high-silicon steels and the nature and composition of the excess phase causing embrittlement are determined. 1 figure : 2 tables; 3 biblio. refs.

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USSR UDC 669.14.018.584.001.6

BABAKOV, A. A., LEVIN, F. L., KONDRAT'YEV, A. I., GOLOVIN, A. I., KUL'KOVA, M. N., DANILYUK, YE. B., PEVZNER, A. YE., OPANEVICH, G. A., and KRAVCHENKO, I. D.

"Experience in Production of Sheet From 25Kh17N4G15AF2 Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 124-131

Translation: The first experimental group of 40-mm sheets of type 25Kh17N4G15AF2 high-strength nonmagnetic steel has been manufactured. Based on studies of the specifics of the production of the steel during various stages of the technological process and study of the properties of the metal produced, practical recommendations are given for the production of sheet. 3 figures; 3 tables.

USSR

UDC 669.017.1:669.14.018.8

LEVIN, F. L., KONDRAT'YEV, A. I., BABAKOV, A. A., GOLOVIN, A. I., and KLIMOV, S. V.

"Influence of Alloying Elements on Structure and Properties of Chrome-Manganese Steel"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys -- Collection of Works), No 77, Metallurgiya Press, 1970, pp 119-124

Translation: During the process of industrial production of nitrogen-containing Kh17AG14 (EP213) stainless steel, a tendency of the steel to formation of pores resulting from separation of nitrogen during crystallization of ingots, was noted.

The specifics of the influence of titanium, carbon, nickel, and nitrogen on the structure and properties of the steel are studied and effective limits of alloying are determined, providing for complete elimination of porosity of ingots. The quality of the metal was increased without decreasing the physical and mechanical properties of the steel. 1 figures; 1 table; 2 biblio. refs.

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USSR

UDC 621.77.016.02:669.14.018.8

BABAKOV, A. A., and CHERKASHINA, N. P.

"Influence of Hot Plastic Deformation on Structure and Mechanical Properties of Kh21N5T Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 108-112

Translation: The results are presented from a study of the mechanical properties of Kh21N5T steel in the cast and deformed states (14.7 T ingot, slab and thin sheet), and chemical analysis of the α and γ phases is performed using a micro-analyzer of the "SAMESA" Company during the process of conversion of ingot to sheet.

Dendritic liquation of the chemical elements in the metal of the ingot, slabs and sheets was not observed. 1 figure; 2 tables; 4 biblio. refs.

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USSR UDC 669.14.018.8

BABAKOV, A. A., LAPIN, P. G., UL'YANIN, YE. A., USPENSKAYA, I. K., and FEDOROVA, V. I.,

"Influence of Nitrogen on the Properties of Chrome-Nickel-Manganese Steel With Molybdenum at Low Temperatures"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 113-116

Translation: The influence of nitrogen on the mechanical properties of 000Kh20G10N6M2 steel is studied in the 20-253°C temperature range. It is demonstrated that the limiting permissible quantity of nitrogen in the steel is 0.4%. Further increases in the quantity of nitrogen cause a decrease in ductility and impact toughness of the steel at low temperatures.

Introduction of nitrogen to the steel produced an increase in strength at 20°C to σ_b 850 Mn/m^2 (85 kg/m^2); $\sigma_T \geq$ 450 Mn/m^2 (45 Kg/mm^2). 2 figures.

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USSR

B

UDC [illegible]

LEVIN, F. L., ~~BABAKOV, A. A.,~~ ABRAMOV, A. A., and ZAKHAROV, Yu. V., Central Scientific Research Institute of Ferrous Metallurgy

"Properties and Structure of Low-Carbon Fe-Ni-Cr-Ti Alloys"

Moscow, Metallovedeniye, No 5, May 70, pp 15-19

Abstract: A study was made of the effect of titanium and carbon on the structural changes and properties of alloys containing 20% Cr and 35% Ni (Kh20N34). Carbon content was varied from 0.02 to 0.07%; Ti content was 1.35% max.

Mechanical testing and phase analysis was done on 15-mm-diameter forged rods which had been austenitized at 1130°C for 45 minutes. Mechanical properties were determined at temperatures of 20°C to 1200°C. Aging for different time intervals at 100°C was done to study the structural stability and properties of the hardened samples. Corrosion testing was done on 3-mm sheet which had been austenitized at 1100 and 1150°C for 20 minutes, water quenched, and aged at 500-900°C for 2000 hours (5000 hours in some cases).

It was found that the mechanical properties of Kh20N34-Ti did not change over the investigated limits. Strength at ambient and elevated temperatures was a function of the carbon content. At a Ti/C ratio of 14 the ductility and impact

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200220019-3"

USSR

LEVIN, F. L., et al., Metallovedeniye, No 5, May 70, pp 15-19

strength are increased at elevated temperatures. Any further increase in the Ti/C ratio lowers these properties. Aging the alloys is accompanied by precipitation of $M_{23}C_6$ carbides into the chromium; if the Ti content is high, TiC is formed. Maximum embrittlement and strength are exhibited when, along with the carbides, the Ni_3Ti phase is formed.

Resistance to intercrystalline corrosion is improved when the carbon content is reduced. Titanium, which bonds the carbon into stable carbides, increases resistance to intercrystalline corrosion. Alloys with 0.02-0.04% C, at a Ti/C ratio equal to or greater than 29, don't exhibit a tendency to intercrystalline corrosion after aging at temperatures above 500°C. Decreasing the Ti/C ratio increases intercrystalline corrosion attack and reduces the time for this attack to take place.

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UDC 620.196

USSR

ZHADAN, T. A., BABAKOV, A. A., SHARONOVA, T. N., and VASIL'YEVA, N. M., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, State Scientific Research Institute of the Nitric Industry

"Investigation of the Inclination of 000Kh20N20S5 (ZI-52) Steel to Intercrystalline Corrosion"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp42-44

Abstract: 000Kh20N20S5 (ZI-52) steel, in spite of its carbon content, shows a tendency to intercrystalline corrosion (ICC) in strong nitric acid in zones of welded joints or after tempering at 700-800°, but the steel retains high resistance to ICC in tests by the AM (GOST 6032-52) method after analogous processing. The tendency of ZI-52 steel to embrittlement and to ICC (after tests in 23 n. HNO_3) on the temperature and duration of tempering are discussed by reference to diagrams. On the basis of experimental data, 000Kh20N20S5 (ZI-52) steel which has been subjected to a 23 n. HNO_3 reaction at 85-100° can be recommended only in the hardened state for unwelded constructions or with obligatory hardening after welding. Three figures, four bibliographic references.

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UDC: 629.78.015.076.66

USSR

BABAKOV, N. A., KIM, D. P.

"On Conditions of Controllability in a Problem of Approach"

Moscow, Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 29-39 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.51)

Translation: The paper analyzes the problem of three-dimensional pursuit of point B by point A under the following conditions. The pursued point B moves in a straight line. The pursuing point A moves at constant speed. The controls of point A are angular velocities which are limited in magnitude. The velocity of the pursuing point A is less than the velocity of the pursued point B. This problem can be formulated as a problem of defining the region of controllability in the space of the initial conditions of pursuit. The initial problem of defining a controllability condition reduces to a variational problem, or more precisely to a two- and three-point variational problem with moving right end of the trajectory. The given varia-

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USSR

BABAKOV, N. A., KIM, D. P., Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik, 1972, pp 26-39

tional problem is solved by means of L. S. Pontryagin's principle of the maximum. As a result, the optimum control structure is found and a scheme for solving the original problem is given. One illustration, bibliography of three titles. Résumé.

2/2

USSR

UDC: 616-006.092.9-097.3

BABAKOVA, S.V., DODONOVA, N.N., TSETLIN, YE.M., GORODILOVA, V.V., AGEYENKO, A.I., and ALTSHTEYN, A.D., Laboratory of Virology Moscow Scientific Research Institute of Oncology imeni P. A. Herzen and Laboratory of Enterovirus and Adenovirus Preparations, State Control Institute of Medical Biological Preparations imeni L. A. Tarasevich.

"Induction of Specific Antitumor Immunity in Hamsters with Green Monkey Adenovirus SA7(C8)."

Leningrad, Voprosy Oncologii, Vol 16, No 3, 1970, pp 40-46

Abstract: Strain SA7(C8) of green monkey adenovirus, highly oncogenic for hamsters, and its large-plaque and small-plaque variants, can induce specific antitumor immunity in adult hamsters. Large-plaque and small-plaque variants of virus SA7(C8) do not differ in their capacity to induce antitumor immunity. A high dose of virus SA7(C8), more than 10^5 TCD_{50}, is required to induce antitumor immunity. Immunity developed during the first week after inoculation of the virus. Cells of transplanted tumor lines regularly contain specific transplantation antigen. In cells of primary tumors induced by adenovirus SA7(C8), transplantation antigen could be found in only some cases.

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USSR

UDC 669:628.518

BABALOV, A. F.

Industrial Heat Protection Engineering in Metallurgy (Promyshlennaya teplozashchita v metallurgii), Moscow, "Metallurgiya" Press, 1971, 360.p., 131 illustrations, 20 tables, 127 bibliographic references

Translation of Annotation:

The monograph outlines the fundamental problems of the theory, planning, and design as well as methods and objects of studies in industrial heat protection engineering. Formulas are cited for methods of screening and dynamic protection including methods of designing heat-protection facilities for operators' positions. Described are investigations conducted by the Laboratory of Industrial Heat-Protection Facilities of the All-Union Scientific Research Institute of Work Safety at different steel mills as well as studies performed at scientific research and planning and design institutes. The book is intended for engineers, scientific personnel and specialists associated with studies, planning, and operation in the thermal equipment areas, heat-protection systems, and labor safety in the hot shops of metallurgical and other industrial sectors. It may also be useful to graduates and students of higher educational institutions.

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USSR

BABALOV, A. F., Promyshlennaya teplozashchita v metallurgii, Moscow, "Metallurgiya" Press, 1971

Translation of TABLE OF CONTENTS (Abridged):

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References follow each ch[illegible].

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USSR UDC: 681.325.65

BABALOVA, I. F., POPOV, Yu. A., SHIRANOVA, S. F.

"Problems of Calculating the Structural Reliability of Magnetic Logical Elements Made of Branched Cores"

Metody razrab. radioelektron. apparatury. No 1 (Methods of Developing Radio Electronic Equipment. No 1), Moscow, 1970, pp 49-54 (from RZh-Avtomatika, Telemekhanika i vychislitelnaya tekhnika, No 9, Sep 70, Abstract No 9B255)

Translation: This article contains an investigation of problems of designing a magnetic logical element permitting realization of all the functions of the algebra of logic or two variables. The logical functions are realized in two cycles: the information recording cycle (magnetization cycle) and the information reading cycle, during which the demagnetizing current is fed. A procedure is presented for designing a magnetic logical element, and the possibility of optimizing its parameters is investigated. A reliability function is introduced the solution of which is realized by iterations. For this purpose, the problem of optimization, for which the algorithm and block diagram of the solution are developed, is formulated. There are two illustrations and a four-entry bibliography.

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TITLE--MEASUREMENT OF THE DIFFUSION OF COLLOIDAL SURFACE ACTIVE AGENTS -U-

AUTHOR-(02)-AKHMADEYEV, M.KH., BABALYAN, G.A.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 277-80

DATE PUBLISHED-------70

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2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MEASURED DISPLACEMENT OF A DIVIDED INDEX ON A SPECIALLY CONSTRUCTED DEVICE HAS BEEN USED TO DET. THE COEFF. OF DISSUION (D) AND FOLLOWING THE PROCESS OF DIFFUSION BY A SERIES OF AQ. SOLNS. OF SURFACE ACTIVE AGENTS (PAV) INTO DISTD. H SUB2 O AT CONCNS. OF 0.2 TO 1PERCENT AND A TEMP. OF 200EGREES. THE PAV EXAMD. WERE: OP-7 (I) AND OP-10 (II) (C SUB8 H SUB17 C SUB6 H SUB4 O(CH SUB2 CH SUB2, O) SUB10); 44-11 (III), AND 44-22 (IV) (H(CH SUB2 CH SUB2 O) SUBX (CH MINUS CH SUB2 O) SUBN (CH SUB2 MINUS CH SUB2 O) SUBY H; AND OZHK (V) (ME(CH SUB2) SUBN CO SUB2 (CH SUB2 CH SUB2 O) SUBX H). THE SPECIAL CONSTRUCTION PERMITTED THE IMMEDIATE ACQUISITION OF NUMERICAL DATA WITHOUT PHOTOGRAPHY AND STANDARDIZATION. MICELLE FORMATION INTERFERED WITH DIFFUSION AT HIGHER CONCNS. OF ALL THE PAV AND A CHARACTERISTIC DECREASE IN D WAS OBSD. AT HIGHER CONCNS. THE HIGHEST D WAS OBTAINED WITH III. IV WAS SOMEWHAT LOWER AND CHANGED LESS OVER THE CONCN. RANGE. STILL LOWER D VALUES WERE OBSD. FOR I AND II AND THEIR D VALUES ALMOST COINCIDED AT HIGHER CONCNS. A VERY SMALL D WAS OBTAINED FOR V. FACILITY: UFIM. NEFT. NAUCH.-ISSLED. INST., UFA, USSR.

UNCLASSIFIED

USSR UDC 539.3

KABULOV, V. K., and BABAMURADOV, K. Sh.

"Computer Calculation of Three-Layer Shells"

Tashkent, FAN Press, 1970, 164 pages

Translation of Annotation: This monograph presents the development of a system for automation of the calculation of flexible plates and shells composed of heterogeneous layers. The problem is solved by a variation method. Using a program written for the M-20 digital computer, the solution of the problem, beginning with the construction of the initial equations and continuing to production of the final result, is performed entirely by machine.

The work presents examples of numerical analysis of the solutions for smooth, 3-layer shells undergoing finite bending under the influence of external forces.

The book is designed for engineers and scientific workers specializing in the area of computer mathematics and the theory of elasticity.
1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EXPERIMENTAL STUDY OF THE WIDTH OF THE NEAR ANODE LAYER IN A KNUDSEN SYSTEM FOR A THERMIONIC ENERGY CONVERTER -U-

AUTHOR-(05)-BABANIN, V.I., BARABASH, M.B., GAIDO, G.K., DUNAYEV, YU.A., KRAVINSKIY, YU.G.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. TEKH. FIZ. 1970, 40(4), 833-8

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SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRODE PROPERTY, THERMIONIC ENERGY CONVERSION, VOLT AMPERE CHARACTERISTIC, BARIUM, CESIUM, TRANSVERSE MAGNETIC FIELD

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